Packaging tray with welded insert

The present invention relates to a packaging tray made of a plastics film and having an insert capable of absorbing liquid. In addition, the present invention relates to a packaging machine for packaging products to be packaged, together with a method of joining an insert to a packaging tray.

When foodstuffs, in particular meat, are packaged, the meat often loses some liquid after a certain period, making the packaging tray and the product packaged therein unprepossessing. It is therefore known in the prior art to place inserts in the packaging trays which are capable of absorbing this liquid. These inserts are, for example, pads filled with superabsorbers. These pads are currently either simply laid in the packaging tray, such that they may move around in particular during transportation or when being positioned on the shelves, and/or stuck in said tray, which on the one hand entails effort and on the other hand generally results in solvent emission.

It is therefore the object of the present invention to provide a packaging tray with an insert which does not exhibit the disadvantages of the prior art.

The object is achieved with a packaging tray made of plastics film and having an insert capable of absorbing liquid, the insert being welded into the packaging tray.

It was extremely surprising to the person skilled in the art, and not at all expected, that the packaging tray

according to the invention is simple and cheap to produce. The packaged product is not contaminated by solvents present for example in an adhesive. The insert may be separated from the packaging tray again after use and the two products may be separately recycled.

According to the invention, the insert is welded into the packaging tray. For the purposes of the invention, welding means that either the insert and/or the packaging tray is heated, and contact is produced between the insert and the packaging tray before, during or after heating such that the insert adheres to the packaging tray after contact.

The plastics film preferably comprises a heat-sealing layer on its side facing the packaged product. This heat-sealing layer may be used, on the one hand, to weld a lidding film to the packaging. In addition, said heat-sealing layer may also be used to weld the insert into the packaging tray. To this end, the heat-sealing layer, as mentioned above, is heated and the insert is brought into contact with the heat-sealing film. Preferably, the seal is peelable, i.e. the insert can be readily separated from the packaging tray again after use, such that insert and packaging tray can be separately disposed of or re-used.

In another preferred embodiment, the insert comprises at least one plastics strip with which it may be welded to the packaging tray.

The packaging tray is preferably closed with a lidding film, which is preferably heat-sealed in peelable manner to the heat-sealing layer.

The present invention further provides a packaging machine for packaging products to be packaged, comprising a work station in which an insert is placed in the packaging tray and welded to the packaging tray.

The packaging machine may for example be a "thermoformer", in which the packaging tray is thermoformed from a film, or a "tray sealer", which uses prefabricated packaging trays.

The packaging machine according to the invention is simple and cheap to produce. The inserts may be placed in the packaging trays mechanically or manually.

Preferably, the packaging machine comprises a work station with a punch with which the insert may be pressed into the packaging tray. In addition, the work station preferably comprises a heating means for heating the packaging tray and/or the insert.

It is also preferable for the packaging machine according to the invention to comprise a counterpart for the punch.

It is also preferable for the heating means to be arranged in the area of the punch and/or in the area of the counterpart.

The counterpart and/or the punch is/are preferably vertically displaceable.

The present invention further provides a method of joining an insert to a packaging tray, in which the insert is placed in the packaging tray and welded thereto.

Preferably, the insert and/or the packaging tray is/are heated for welding of the insert and the insert is pressed down onto the packaging tray.

The insert is preferably only spot-welded onto the packaging tray.

The insert is preferably heat-sealed to the packaging tray in peelable manner.

The invention is explained below with reference to Figures 1 to 3. These explanations are made only by way of example and do not limit the general concept of the invention.

Figure 1 shows the packaging tray according to the invention.

Figure 2 shows the packaging tray according to the invention filled with a packaged product.

Figure 3 shows the work station of a packaging machine for welding the insert into the packaging tray.

Figure 1 shows the packaging tray 1 according to the invention, said tray consisting of a plastics film. The plastics film consists either completely of a material which is heat-sealable or is a multilayer film, which comprises a heat-sealing layer on the side facing the

insert. The insert is welded to this heat-sealing layer. Welding of the insert to the heat-sealing layer is effected by heating the heat-sealing layer either before, during or after placement of the insert into the packaging tray. After heating of the heat-sealing layer, the insert is preferably pressed against the heat-sealing layer, in order to improve contact between the insert and the heat-sealing layer. The person skilled in the art will understand that it may also be sufficient merely to heat the insert and press it against the heat-sealing layer. Furthermore, the person skilled in the art will understand that it may be sufficient to spot-weld the insert onto the heat-sealing layer. This embodiment of the packaging tray according to the invention has the advantage that the heat for heat-sealing need be introduced only spotwise. The person skilled in the art will additionally understand that the insert may also at least in part comprise a plastics film, which is heat-sealable and may thus form a bond with the packaging tray. Furthermore, a lidding film is welded to the heat-sealing layer, with which lidding film the packaging is closed after placement of the insert and after filling with products to be packaged and optionally prior to evacuation or gas exchange.

Figure 2 shows the packaging tray according to Figure 1, but filled with a packaged product 9. The packaged product 9 rests on the insert, such that liquid exuded by the packaged product may be absorbed by the insert, such that the packaging tray looks appealing.

Figure 3 shows the work station of the packaging machine according to the invention for packaging products to be

packaged. If this packaging machine is a thermoformer, in which the packaging trays are produced by thermoforming of film, this work station is arranged directly after the thermoforming station. In the work station, the inserts (not shown) are welded to the packaging trays, which move cyclically into the plane of the paper. For this purpose, a punch 6 is present, which may be displaced vertically by the displacing means 11 and which comprises at its lower tip 11 at least one heating means 7 with which a heat-sealing layer of the film from which the packaging tray is made is heated through the insert. The punch additionally presses the insert against the packaging tray. In order to prevent deflection or tearing of the packaging tray, the work station comprises a counterpart 8, which is likewise vertically displaceable. The person skilled in the art will recognise that vertical displacement of the counterpart 8 is not absolutely essential. Figure 3 is divided in the middle and shows two possible stationary positions of the work station 5. In the left-hand part, the punches 6 have been raised and the counterpart 8 lowered. In this position, the packaging trays 1 may be conveyed onwards in the paper plane. The right-hand part, in contrast, depicts the position in which the punches are pressing the insert (not shown) against the packaging tray 1, heating it in the process, and in which the punches or the heating means cooperate with the counterpart 8 to weld the insert in the packaging tray.

List of reference numerals:

1 Packaging tray
2 Insert
3 Heat-sealing layer
4 Lidding film
5 Work station
6 Punch
7 Heating means
8 Counterpart
9 Packaged product
10 Pneumatic cylinder for vertical displacement of the counterpart
11 Means for vertical movement of the pressure-exerting punch